BY ORDER OF THE COMMANDER
AIR EDUCATION AND TRAINING COMMAND

AF INSTRUCTION 11-403

AIR EDUCATION AND TRAINING COMMAND
Supplement 1

5 DECEMBER 2003

Flying Operations

AEROSPACE PHYSIOLOGICAL TRAINING PROGRAM

The basic publication has changed; however, the only revisions required in this supplement were made in the date line, OPR line, leadline, supersession line, office symbols, and certifying and approving authorities.

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

OPR: HQ AETC/SGPT (Lt Col C. Caulkins) Certified by: HQ AETC/SGP (Col B. Parsa)
Supersedes AFI 11-403/AETC Sup 1, 20 December 1999 Pages: 5/Distribution: F

AFI 11-403, 20 February 2001, is supplemented as follows:

SUMMARY OF REVISIONS

Aligns specific AETC aerospace physiology training requirements, supporting joint specialized undergraduate flying training (JSUFT) and AETC graduate flying training programs, with the basic AFI. Identifies the MAJCOM coordinator for AETC's Aerospace Physiology Program (para 1.2.4) and the MAJCOM functional manager (MFM) for Aerospace Physiology (para 1.2.6.1). Adds assigned life support and survival, escape, resistance, and evasion (SERE) instructor job descriptions, qualifications, and responsibilities (paras 37 and 38). Lists initial issue flight gear and equipment (para 10.1.1) and defines specific inspection criteria for swing-landing trainers (SLT) and lateral drift trainers (LDT) (para 10.5). Deletes requirement to use AETC Form 44, **Aerospace Physiology Training Critique**. A star (★) in the left margin indicates revised material.

NOTE: Maintain and dispose of records created as a result of processes prescribed in this publication in accordance with AFMAN 37-139, *Records Disposition Schedule.*

★1.2.4. The Chief, Aerospace Physiology Branch (HQ AETC/SGPT), Randolph AFB TX, is designated as the MAJCOM coordinator for AETC's Aerospace Physiology Program.

★1.2.6.1. The Manager, Aerospace Physiology Training Flight (12 MDG/SGGT), Randolph AFB TX, is designated as the AETC Functional Manager for Aerospace Physiology; that is, the MFM.

2.1.1.2. For ENJJPT and joint specialized undergraduate pilot training (JSUPT) students, Type 1 and 2 chamber flights, air charge ejection seat, T-37 ejection seat procedural training, descent and landing training (DLT), and an examination must be completed before the first T-37 sortie. All requirements for

original training must be completed before SUPT students depart for training tracks, (bomber/fighter [B/F], airlift/tanker [A/T], helicopter [helo], and multiengine/turboprop [MT]) at different bases. Issue a completed AF Form 702, **Individual Physiological Training Record**, to each student at the end of Phase II of SUPT. For JSUNT students, Type 1 and 2 chamber flights, T-43 life support and egress, T-43 wet ditching, and an examination must be completed before the first T-43 flight. Issue a completed AF Form 702 to each student on completion of these requirements.

3.2. Requirements for familiarization flights are in AFI 11-401, *Aviation Management.* Report flying time for all aerospace physiology personnel on the Physiological Training Monthly Report.

3.3. For other attention-critical tasks, including MH-15 ejection seat trainer duty and parachute familiarization (parasail) training duties, the attending flight surgeon will determine DNIF status limitations and document them on the AF Form 1042, **Medical Recommendations for Flying or Special Operational Duty**.

3.5. Use of personnel not directly assigned to APTFs is at the discretion of the APTF flight commander. The local mission should benefit from the use of these resources. Questions regarding the use of these personnel should be referred to HQ AETC/SGPT for resolution.

3.6.3. Approval to support flying or jump missions rests with HQ AETC/SGPT. The organization desiring support will forward a memorandum of request through the medical group commander to HQ AETC/SGPT for consideration.

3.6.6. (Added)(AETC) APTFs should annually forecast training requirements for the coming fiscal year. These requirements are due to HQ AETC/SGPT by 1 April of each year.

★3.7. (Added)(AETC) Aircrew Life Support Instructors Assigned to Undergraduate Flying Training Aerospace Physiology Training Flights (APTF):

3.7.1. (Added)(AETC) Qualifications. Each individual must have 1 year of AETC life support and aircrew training experience to qualify for this one-deep position. Additionally, the selected individual will be required to complete a formal instructor course prior to being assigned to an aerospace physiology unit (APU). The 1T1X1s assigned to APUs are not required to attend the Aerospace Physiology Apprentice Course, but they must complete upgrade training in aerospace physiology topics and duties to supplement their specialty training. Upgrade training will be performed locally at the individual's APU of assignment, and training documentation will be maintained in his or her on-the-job training (OJT) records.

3.7.2. (Added)(AETC) Duties and Responsibilities. APTF life support trainers will instruct joint training to pilots, navigators, and other selected military personnel during the initial pilot or navigator training course. These trainers will teach academic lectures and demonstration on life support systems as outlined in the AETC curriculum. They will ensure aircrew life support training meets or exceeds standards set in the aircrew life support directive (AFI 11-301, *Aircrew Life Support [ALS] Program)* and will assist the APTF in other areas of operations. The aerospace physiology command and flight leadership will ensure all equipment is authorized and applicable technical data (military or commercial) is complied with. Initial or recurring altitude chamber flights are required to achieve and maintain appropriate experience and knowledge levels. Wear of flight suit is authorized while participating in training activities.

★3.8. (Added)(AETC) SERE Instructors Assigned to Undergraduate Flying Training APTFs:

3.8.1. (Added)(AETC) Qualifications. The selected individuals will be required to complete a formal instructor course prior to being assigned to the APTF. The 1T0X1s assigned to aerospace physiology

training units are not required to attend the Aerospace Physiology Apprentice Course, but they must complete upgrade training in aerospace physiology topics and duties to supplement their specialty training. Upgrade training will be performed locally at the individual's APU of assignment, and training documentation will be maintained in his or her OJT records. Wear of the flight suit is authorized while participating in training activities.

3.8.2. (Added)(AETC) Job Description (5-Level). Five-level personnel instruct joint training to pilots, navigators, and other selected military personnel during initial flying training courses. They teach parachuting principles, procedures, and techniques, to include hanging harness, parachute landing falls (PLF), and land parasail. They teach academic lectures on environmental adaptations, medical care, signaling, communication, navigation, and personal protection and conduct laboratory exercises on signaling devices and land parasail. They support parachute landing and hoist recovery procedures and augment chamber training.

3.8.3. (Added)(AETC) Job Description (7-Level). Seven-level personnel supervise and instruct pilot and navigator trainees and other selected military personnel during initial flying training courses. They supervise and teach parachuting principles, procedures, and techniques, to include hanging harness, PLFs, and land parasail. They teach academic lectures on environmental adaptations, medical care, signaling, communication, navigation, and personal protection and conduct laboratory exercises on signaling devices and land parasail. They support parachute landing and hoist recovery procedures, augment chamber training, track student progress, monitor proficiency evaluations, counsel students on deficiencies, and prescribe remedial training. They monitor enlisted specialty training, safety, and standardization/evaluation programs.

5.2.1. (Added)(AETC) Superior instruction is the standard for AETC APTFs. Personnel who cannot achieve (or who fail to maintain) the highest instructor standards should be formally entered into retraining by their unit. If acceptable progress is achieved, they may regain their instructor status. If acceptable progress is not achieved, they should be decertified as instructors by the APTF flight commander.

5.2.2. (Added)(AETC) AETC APTFs will conduct bimonthly instructor continuation training. The minutes of this training will be maintained for 1 year. All instructors who were absent must read and initial the minutes.

5.2.3. (Added)(AETC) Use AETC Form 281, **Instructor Evaluation Checklist**, to record instructor evaluations. Any overall evaluation rating of "needs improvement" requires a followup evaluation within 30 days. If a lesson or class containing items needing improvement is not scheduled within 30 days, explain in section IV of the AETC Form 281 and perform a followup evaluation during the next scheduled appropriate lesson.

5.7. Prepare a written test for original (non-UFT) courses and revise them annually. Maintain two different versions.

6.1. For JSUFT, requirements to fulfill this paragraph are contained in the appropriate AETC syllabuses, instructor guides, and student workbooks.

6.1.3. During original, refresher, and passenger courses, include a discussion of the characteristics, use, and limitations of the emergency oxygen cylinder. Ensure breathing characteristics of this cylinder are discussed as follows: with a full and nearly empty system, at high and low altitude conditions, and with the CRU-60/P quick disconnect attached and disconnected.

6.1.14. (Added)(AETC) Aerospace Physiology Spanish Training Program. This program will be conducted at Randolph AFB. Instructors desiring duty in this program must take the Foreign Language

Proficiency Examination (Spanish) and achieve a minimal score of "2" in both the reading and comprehension levels prior to being accepted for an assignment to this program.

7.4. Because of JSUFT scheduling constraints and TDY costs incurred by aircrews from other bases, student training should be scheduled around recurring readiness commitments if possible. Aircrew training will take priority over unscheduled or unannounced organizational and base exercise requirements.

7.10.8. (Added)(AETC). During descent from 10,000 feet on Type 2, 3, and 4 chamber flights, have students breathe through the oxygen regulator in the "normal off" and "normal on" configurations (if regulators permit). Before the oxygen mask is removed, have the students disconnect their regulator hose from the quick-disconnect and practice breathing through the disconnect warning device. Emphasize the characteristics of and proper response to these configurations.

7.10.9. (Added)(AETC) T-1A crewmembers should use the T-1A quick-don oxygen masks (Scott 359-series) to recover from the hypoxia demonstration during their refresher physiological training chamber flights.

★10.1.1. Personnel assigned to AETC APTFs are authorized to wear flight suits while conducting training and related tasks. These tasks include altitude chamber operations and parachute familiarization training as well as oxygen system maintenance and recharging. Initial issue authorization includes two flight suits, one summer-weight nomex flight jacket, one pair of flight gloves, one pair of flight boots, one pair of nomex long underwear, and one pair of aviator sunglasses. Aviator prescription spectacles are authorized and prescription sunglasses should also be issued based on parachute or parasail training and observer requirements.

10.1.2. (Added)(AETC) All life support equipment (helmets, oxygen masks, anti-G suits, etc.) will be inspected and maintained in accordance with appropriate technical orders. The sole exception is the disassembly and inspection of oxygen masks, which should be done every 120 days.

10.2. Support of aerospace physiology training devices is essential to the success of the AETC and Air Force aerospace physiology programs. These programs requires support by unit, wing, and depot maintenance agencies. Although some training devices may have the appearance of being mobile (vertigon, egress procedural trainers, barany chair, etc.), they were not designed or fabricated to be moved frequently or to locations away from the APTUs. In fact, movement of these devices away from the APTUs is not authorized.

10.4. (Added)(AETC) Equipment Responsibilities of Logistics Group Commanders. The logistics group commander (or the maintenance authority at contract maintenance locations) will:

10.4.1. (Added)(AETC) Furnish intermediate-level maintenance support that is beyond the capability of the aerospace physiology training technicians.

10.4.2. (Added)(AETC) Furnish bench stock, supply expediting, and repair cycle asset support.

10.4.3. (Added)(AETC) Provide quality control and maintenance analysis support and technical assistance for maintenance of forms, material, and publications deficiency reporting.

★10.5. (Added)(AETC) Equipment Responsibilities of the Base Civil Engineer. The base civil engineer will:

10.5.1. (Added)(AETC) Establish accountability for parachute SLTs, LDTs, hanging harness trainers, and PLF platforms as real property installed equipment according to AFI 32-9005, *Real Property Accountability and Reporting.*

10.5.2. (Added)(AETC) Maintain the parachute familiarization training (parasail) field according to AETCI 36-2224, *Procedures for Parachute Familiarization Training (PFT).*

10.5.3. (Added)(AETC) Conduct the semiannual inspections and maintenance of the devices in paragraph 10.5.1. Periodic inspections will include the structural integrity of these devices, all rigging (pulleys, cables, and ropes), platforms, safety rails, stairs, and PLF pits.

10.5.4. (Added)(AETC) Carefully inspect SLT cables. (***NOTE:*** Stainless steel cable is not very flexible and is difficult to determine wear. It should be replaced with 637 cable because each individual strand of wire that makes up the entire cable is thinner, thus increasing overall flexibility.)

10.5.5. (Added)(AETC) To replace current bushing pulleys, install pulleys with sealed bearings. (The latter operate more smoothly and require no maintenance.)

10.5.6. (Added)(AETC) Inspect all U-loops and mounting brackets for cracks and wear and replace or reweld them as needed. When replacing U-loops, install larger (1/4") diameter loops.

10.5.7. (Added)(AETC) Construct or replace trainer platforms and stairs with nonskid metal corrugated decking material to enhance safety and minimize future maintenance requirements. Aerospace physiology personnel are responsible for the cleanliness and daily inspections of these facilities and related equipment. When the needed support functions are operated under civilian contract, APTUs will assure adequate support is provided in the contract performance requirements.

11.1. Lecture-hour credit for personnel conducting training (classroom and performance) outlined in the basic AFI and AETC flying training syllabuses includes academic presentations, chamber flight lectures, ejection seat procedural and ground egress training, M-15 ejection seat training, and parachute descent and landing.

11.2. Notify HQ AETC/SGPT by telephone of each Grade IV chamber reactor case and all chamber cases diagnosed as decompression sickness. Send one copy of AF Form 361, **Chamber Reactor/Treatment Report**, to HQ AETC/SGPT within 10 duty days of a reaction or notification of a delayed reaction.

11.3. For JSUFT students, record training in parachute familiarization, spatial disorientation demonstrator, procedural ejection seat, night vision, and wet ditch on an AF Form 699, **Physiological Training Record.** Indicate the type of refresher training provided; for example, trainer, attack, reconnaissance, fighter (TARF). Do not record procedural ejection seat training or physiological briefings given to AFROTC cadets or CAP students on an AF Form 699. Instead, record this information on a class roster and forward copies to the local operations group commander.

11.11. **(Added)(AETC) Aerospace Physiology Training Critique.** All students completing original, refresher, and passenger classes will complete a training critique. This form should be developed locally and used to evaluate the effectiveness of unit training programs.

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